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NEW UTILITY PATENT APPLICATION TRANSMITTAL <i>(only for new nonprovisional applications under 37 CFR 1.53(b))</i>	Attorney Docket Number	3962
	First Named Inventor	Marcello QUADRANA
	Total Pages in this Submission	
	Express Mail Label No.	EL159184029US

APPLICATION ELEMENTS	ACCOMPANYING APPLICATION PAGE(S)
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<p>1. <input checked="" type="checkbox"/> Fee Transmittal Form (in duplicate) <input checked="" type="checkbox"/> Check Enclosed</p> <p>2. <input checked="" type="checkbox"/> Specification <i>(preferred arrangement set forth below)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Descriptive Title of the Invention <input type="checkbox"/> Cross Reference(s) to Related Case(s) <input type="checkbox"/> Statement Regarding Fed sponsored R & D <input type="checkbox"/> Background of the Invention <input type="checkbox"/> Brief Summary of the Invention <input type="checkbox"/> Brief Description of the Drawing(s) <input type="checkbox"/> Detailed Description <input type="checkbox"/> Claim or Claims <input type="checkbox"/> Abstract of the Disclosure <p>3. <input checked="" type="checkbox"/> Drawing(s) <i>(when necessary per 35 USC 113)</i></p> <p>4. Oath or Declaration</p> <p>a. <input checked="" type="checkbox"/> New Declaration <input checked="" type="checkbox"/> Executed</p> <p>b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63(d)) <i>(for continuation/divisional with Box 17 completed)</i></p> <p>i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</p> <p>5. <input checked="" type="checkbox"/> Incorporation by Reference <i>(useable if Box 4b is checked)</i>. The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.</p>	<p>6. <input type="checkbox"/> Assignment & Assignment Recordation Cover Sheet</p> <p>7. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i></p> <p>8. <input type="checkbox"/> Information Disclosure Statement & PTO-1449 <input type="checkbox"/> Copies of IDS Citation(s)</p> <p>9. <input type="checkbox"/> Preliminary Amendment</p> <p>10. Small Entity Statement <input type="checkbox"/> New Statement enclosed <input checked="" type="checkbox"/> Statement filed in prior application. Status still proper and desired</p> <p>11. <input checked="" type="checkbox"/> Return Postcard</p> <p>12. <input type="checkbox"/> _____</p> <p>13. <input type="checkbox"/> _____</p> <p>14. <input type="checkbox"/> _____</p> <p>15. <input type="checkbox"/> _____</p> <p>16. <input type="checkbox"/> _____</p>
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ADDRESS TO:
Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

17. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☒ Continuation-in-part (CIP) of prior application No: 08 /962,824

Prior application information: Examiner: W. Hong Group/Art Unit: 3725

18. CORRESPONDENCE ADDRESS

NAME	Albert C. Smith Fenwick & West LLP				
ADDRESS	Two Palo Alto Square				
CITY	Palo Alto	STATE	CA	ZIP CODE	94306
COUNTRY	U.S.A.	TELEPHONE	(650) 858-7296	FAX	(650) 494-1417
Name (Print/Type)	Albert C. Smith			Registration No. (Attorney/Agent)	20,355
Signature	A.C. Smith			Date	5/28/99

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN

Docket Number (Optional):
3962

Applicant or Patentee: Marcello QUADRANA

Application or Patent No.: _____

Filing Date or Issue Date: _____

Title: FOOD GRINDER

I hereby declare that I am

☐ the owner of the small business concern identified below:

☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN FELSINEO, S.p.A.

ADDRESS OF SMALL BUSINESS CONCERN Via Masetti, 8-10

40069 Zola Predosa, ITALY

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

☒ the specification filed herewith with title as listed above.

☐ the application identified above.

☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention must file separate verified statements averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each such person, concern or organization having any rights in the invention is listed below:

☒ No such person, concern, or organization exists.

☐ Each such person, concern or organization is listed below:

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Franco RAIMONDI

TITLE OF PERSON IF OTHER THAN OWNER PRESIDENT

ADDRESS OF PERSON SIGNING Via Colleverde, 13 - ZOLA PREDOSA - ITALY

SIGNATURE 

DATE May 21, 1999

FOOD GRINDER

Related Application:

This is a continuation-in-part application of pending application Ser. No. 08/962, 824, entitled "Cutting Assembly For Food Grinding Machines", filed on November 3, 1997 by M. Quadrana.

Field Of The Invention:

The present invention relates to a cutting assembly food grinding machines.

Background Of The Invention:

Conventional grinding machines used in the alimentary field are essentially constituted by a screw feeder, which is inserted in a specifically provided cylindrical seat arranged downstream of an inlet, is turned by a specifically provided motor and conveys the food towards a plurality of blades which rotate coaxially thereto, are fitted on the same driving shaft as the screw feeder, are grouped in a pack and are alternated with perforated screening diaphragms.

The diaphragms are arranged in a gradually decreasing sequence as regards both the density of the holes that affect each diaphragm and the diameter of the holes, so as to gradually provide, as the food advances outwards, a progressively finer reduction of the particle size of the mass.

However, especially in the processing of very dense food or of food having a fleshy pulp, the resistance that occurs when the mass passes between the diaphragms generates a very intense pressure, which is transmitted and distributed to said diaphragms, to the rotating blades and to the screw feeder.

Accordingly, this entails, especially in the industrial use of grinding machines, the use of motors with a high power rating, even as high as 70 HP, in order to overcome the resistance opposed by the mass being processed.

As a further consequence, there is provided a gradual deterioration not only of the sharpness of the blades but also of their structure, which by wearing very quickly require their replacement on the average every 4-5 working hours in addition to releasing microscopic fragments into the food.

Another problem of the known art in this field is the fact that in the diaphragms, the perforations that allow passage through them are distributed on each diaphragm with a decreasing density with respect to their surfaces, and this worsens the problem of the pressure applied by the food mass.

Summary Of The Invention:

The principal aim of the present invention is to solve the above problems of the known art by providing an improved cutting assembly for food grinding machines which substantially reduces the pressure produced during processing,

eliminates the possibility of releasing structural particles into the food and maintains a constant density of the distribution of the holes as the screening capacity gradually becomes finer.

This aim, these objects and others are achieved by an improved cutting assembly for food grinding machines, characterized in that it comprises a static outer jacket provided with conventional means for coupling to the loading inlet of a grinding machine, annular recesses being formed in the internal thickness of said jacket, said recesses having preset volumes and being mutually separated, a food pushed element being mounted inside said jacket so that it rotates coaxially, a screening means with differentiated passage regions being interposed between said pusher and said jacket, each region acting at said annular recesses.

Brief Description Of The Drawings:

Further characteristics and advantages will become apparent from the description of a preferred embodiment of a cutting assembly for food grinding machines, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a longitudinal sectional view of a first embodiment of the present invention showing the essentials of the cutter assembly;

Figure 2 is a transverse sectional view, taken along the plane II-II of Figure 1;

Figure 3 is a sectional view of a second embodiment of the present invention showing the essentials of the cutter assembly;

Figure 4 is a transverse sectional view, taken along the plane IV-IV of Figure 3;

Figure 5 is a perspective, exploded view of a cutter element and screening means according to the embodiment of the cutter assembly of Figure 1; and

Figure 6 is a perspective, exploded view of a cutter element and screening means according to the embodiment of the cutter assembly of Figure 3.

Detailed Description Of The Invention:

With particular reference to the above Figures, the reference numeral 1 generally designates the cutting assembly for food grinding machines, which comprises a static outer jacket 2 provided with conventional means 3 for coupling to a loading inlet of a grinding machine, which is not illustrated since it is of a conventional kind.

A plurality of annular recesses 4 is formed in the internal thickness of the jacket 2; the recesses have preset volumes and are mutually separated.

A food cutter and pusher element 5 is mounted inside the jacket 2 so as to rotate coaxially and is supported in the grinding machine through conventional means which are adapted to keep it constantly centered; a screening means 6 is interposed between the cutter and pusher element 5 and the jacket 2 and is divided into differentiated passage regions Z_1 , Z_2 , Z_3 and Z_4 , each of which can be crossed at each annular recess 4.

All of the recesses have a transverse cross-section with rounded edges which are blended with the concurrent ones by means of a respective convex profile 7, so as to define a forced path for the food, on which the screening means 6 rests and is locked.

The cutter and pusher element 5 is constituted, as shown in Figures 2 and 4 and 5-6, respectively, in detail by screw feeder blade elements 8 separated by annular ridges 8e. The helical edges 8a of the blades extend between two consecutive ridges 8e, are advantageously sharp and rotate so as to skim the internal surface of the screening means 6.

Each one of the blade elements 8 is preferably fabricated as a separate piece, as shown in Figure 5, by known methods. Such separate elements are eventually jointed to each other, at the ridges 8e, so as to obtain the cutter element 5, shown in Figure 1. The number of blades may be any according to the dimensions of the

machine. In the embodiments of the Figures, 7 and respectively 8, equidistant blades are shown.

The screening means is constituted by a thin cylindrical body 9, the surface of which is affected by contiguous bands of sets of through holes 10, separated by collars with slots of suitable shapes 11, which constitute the differentiated passage regions Z_1, Z_2, Z_3, Z_4 in which the ratio between the continuous surface and the perforated surface is constant throughout.

In a possible alternative embodiment, the static outer jacket 2 can flare outwards, as shown in Figure 3. Accordingly, the screw feeder blade elements 8 (see Figure 6) also have suitably increasing cross-sectional dimensions, corresponding to the jacket flaring, and so does the interposed cylindrical body 9 that constitutes the screening means 6, which in this case is constituted by the coaxial and sequential joining of a plurality of cylinders 9a, 9b, 9c, 9d whose diameters gradually increase outwards; each cylinder defines one of the regions Z_1, Z_2, Z_3, Z_4 , and the cylinders are mutually joined by means of corresponding perforated collars with slots 11.

In this case, too, each one of the cylinders 9a, 9b, 9c, 9d has lateral surfaces affected by the corresponding sets of through holes 10 whose diameters decrease

for each cylinder, so that the ratio between the perforated surface and the continuous surface is constant for each cylinder.

In order to better facilitate the advancement of the mass of processed food, the axis A' of the holes 10 is directed towards the outlet.

The operation of the present invention can be easily deduced from the above description: the food to be ground is introduced normally in the grinding machine through a hopper and passes from there into the seat in which the conventional screw feeder rotates; the cutting assembly 1 is installed coaxially at the head of said screw feeder.

The food, after the action of said screw feeder, is pushed further by the screw feeding effect of the blade elements 8, which rotate with the helical edges 8a thereof skimming the cylindrical body 9, while the cutter element 5, on the whole, is kept centered therein with conventional means for supporting it on the machine; at the same time, the food is engaged and cut by said helical edges 8a, which are conveniently sharp.

The conveyance motion forces the food to pass through the various regions Z_1, Z_2, Z_3, Z_4 , following the forced path defined between the annular recesses 4 and the grooves 8b which are alternated with the ridges 8e, as shown in Figure 1 by the arrows "A"; in following this path, the mass of food passes through the

holes 10, whose diameters gradually decrease along the path, thus providing a gradually finer shredding action.

It should also be noted that the number of the holes 10 for each region Z is such as to maintain a constant ratio between the continuous surfaces of the regions Z and the perforated ones, so as to considerably reduce the pressure applied by the mass of food in passing through them.

Moreover, since the cylindrical body 9 is static, tangential stress, and therefore also abrasion, between the helical edges 8a of the blade elements 8 and the cylindrical body 9, in which the regions Z are formed, are also eliminated, and the blades are always centered during rotation. Functional advantages stem also from the fact that the edges 8a of the blades of the embodiment of Figure 5, deviate each, before merging into a respective ridge 8e located upstream along the food processing path, to form at each region of a blade element 8 corresponding upon assembly with the collar area having the slots 11, a respective pocket 8c. Such pockets 8c facilitate receiving of the food processed in its passage from the annular recess 4 of the jacket 2 to the grooves 8b formed between the blades.

In the embodiment of Figure 6, the transfer of the food from an annular recess 4 opposed to the grooves of a blade element 8 to the grooves 8b of the subsequent blade element 8, is even more facilitated, and food agglomeration risks

are practically eliminated by virtue of the flaring configuration of the assembly. Indeed, the food path through a recess 4 and next grooves is almost straight, the slots 11 being arranged crosswise thereat.

The blade edges 8a have each, in this embodiment, a bevel located suitably at the end intended to skim over a corresponding slotted collar region 11.

It will be accordingly noted that a processing path with a smooth food transfer is provided which is formed, for both embodiments described, by recesses 4 of the jacket 2, through holes 10 of the screening means, free passage means constituted by the slotted collars 11, and grooves 8b of the cutter element 5. The screening means 6, as mentioned above, have, for each of the passage regions Z_1 , Z_2 , Z_3 and Z_4 , irrespective of the hole diameters, a constant total holed surface.

It has thus been shown that the described invention achieves the intended aim and objects.

The present invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may also be replaced with other technically equivalent elements.

In the practical embodiment of the present invention, the materials used, as well as the shapes and the dimensions, may be any according to the requirements without thereby abandoning the scope of the protection of the appended claims.

What Is Claimed Is:

1. A food grinding machine, comprising:

a static outer jacket including a peripheral walls enclosing an inner space,
and being coupleable to a loading inlet of the grinding machine;

a plurality of successive annular recesses being formed in said peripheral
wall, said recesses having preset volumes and being separated one from the other;

a food pusher and cutter element being mounted in said inner space for
rotation coaxial to said jacket for advancing food along a food processing path;

a plurality of screening means defining differentiated screening passage
regions provided in sequence along the food processing path for screening
processed food, said screening means being interposed between said pusher and
cutter element and said jacket and arranged each in a corresponding relationship
with a respective one of said recesses; and

a plurality of free passage means for allowing free passage of the processed
food from a screen passage region to a subsequent screen passage region, said free
passage means being constituted by respective slotted collar regions provided
between every two consecutive said differentiated screening passage regions;

wherein said food processing path includes said plurality of successive
recesses and said plurality of screening means through each of which the

processed food is advanced by said pusher and cutter element by being inserted through a said screening means into, and subsequently extracted through a said free passage means out of a said recess and further inserted through a subsequent said screening means into a subsequent said recess.

2. The grinding machine of claim 1 wherein said annular recesses have each a transverse cross section with rounded edges which are blended with concurrent edges with a convex profile to define a forced path for the processed food, each convex profile furthermore acting as supporting and locking element for said screening means.

3. The grinding machine of claim 1, wherein said pusher and cutter element is constituted by blade elements, having sharp helical edges oriented so as to provide a screw feeding effect and to skim an internal surface of said screening means as the blade elements rotate.

4. The grinding machine of claim 1, wherein said plurality of screening means each includes a thin hollow cylindrical body coaxially arranged with respect to said jacket and comprising sets of through holes distributed on surface regions thereof, said sets of holes defining said differentiated screening passage region.

5. The grinding machine of claim 4, wherein at each of said differentiated screening passage regions a respective set of through holes is provided with the holes being in such a number and with such a diameter so that a resulting total holed surface is provided for each of said screening passage regions, which is substantially constant.

6. The grinding machine of claim 1, wherein the peripheral wall of said static outer jacket flares outwards.

7. The grinding machine of claim 6, wherein said screening means are constituted by a plurality of successive hollow cylinders having corresponding sets of through holes with diameters decreasing from one cylinder to a subsequent cylinder along said food processing path, said hollow cylinders being arranged mutually coaxial and joined to each other through a respective one of said collar regions, with the diameters of said hollow cylinders increasing along said food processing path.

8. The grinding machine of claim 7, wherein for each of said hollow cylinders, the through holes are in such a number and with such a diameter that the holed surfaces are substantially constant.

9. The grinding machine of claim 8, wherein axes of said through holes are inclined in an orientation along said food processing path.

10. A grinding machine, comprising:

a static outer jacket including a peripheral wall enclosing an inner space,
and being coupleable to a loading inlet of the grinding machine;

a plurality of successive annular recesses in said peripheral wall, said
recesses having preset volumes and being separated one from the other;

a food pusher and cutter element being mounted in said inner space for
rotation coaxial to said jacket for advancing processed food along a food
processing path;

a plurality of screening means defining differentiated screening passage
regions provided in sequence along the food processing path for screening the
processed food, said screening means being interposed between said pusher and
cutter element and said jacket and arranged each in a corresponding relationship
with a respective one of said recesses; and

a plurality of free passage means for allowing free passage of the processed
food from a screen passage region to a subsequent screen passage region, said free
passage means being constituted by respective slotted collar regions provided
between every two consecutive said differentiated screening passage regions;

wherein each one of said differentiated screening passage regions comprises
a set of through holes having diameters which vary from a region to another, said

holes being in such a number and with such a diameter that a resulting total holed surface for each of said screening passage regions is substantially constant.

11. The grinding machine of claim 10 wherein each of said annular recesses has a transverse cross-section with rounded edges which are blended with concurrent edges with a convey profile to define a forced path for the processed food, each convex profile furthermore acting as supporting and locking element for said screening means.

12. The grinding machine of claim 10, wherein said pusher and cutter element is constituted by blade elements having sharp helical edges oriented so as to provide a screw feeding effect and to skim an internal surface of said screening means as the blade elements are rotated.

13. The grinding machine of claim 10, wherein said plurality of screening means each includes a thin hollow cylindrical body coaxially arranged with respect to said jacket and comprising sets of through holes distributed on successive surface regions thereof, said sets of holes defining said differentiated screening passage regions.

14. The grinding machine of claim 10, wherein the peripheral wall of said static outer jacket flares outwards.

15. The grinding machine of claim 14, wherein said screening means includes a plurality of successive hollow cylinders having corresponding sets of through holes with diameters decreasing from one cylinder to a subsequent cylinder along said food processing path, said hollow cylinders being arranged mutually coaxial and joined to each other through a respective one of said collar regions, with the diameters of said hollow cylinders increasing along said food processing path.

16. The grinding machine of claims 15, wherein axes of said through holes are included in an orientation along said food processing path.

17. A grinding machine for a food grinding machine, comprising:
a static outer jacket including a peripheral wall enclosing an inner space, and being coupleable to a loading inlet of the grinding machine;

a plurality of successive annular recesses in said peripheral wall, said recesses having preset volumes and being separated one from the other;

a food pusher and cutter element including blade elements with blades separated by grooves alternated with annular ridges, said pusher and cutter element being mounted in said inner space for rotation coaxial to said jacket for advancing processed food along a food processing path;

a plurality of screening means forming differentiated screening passage regions provided in sequence along the food processing path for screening the processed food, said screening mean being interposed between said pusher and cutter element and said jacket, and arranged each in a corresponding relationship with a respective one of said recesses and with the grooves of a said blade element; and

a plurality of free passage means for allowing free passage of the processed food from a said recess to the corresponding grooves, and further, to a subsequent screen passage region, said free passage means being constituted by respective slotted collar regions provided between every two consecutive said differentiated screening passage regions;

wherein said food processing path includes said plurality of successive recesses, said plurality of screening means, and the corresponding grooves of said blade elements, the processed food being advanced in sequence through each one of the said recesses, screening means and corresponding grooves by said pusher and cutter element upon insertion from the grooves of a said blade element through a said screening means into, and subsequently extracted through a said free passage means, out of a said recess, and fed into the grooves of a subsequent

blade element for further insertion through a subsequent said screening means into a subsequent said recess.

ABSTRACT OF THE DISCLOSURE

A food grinding machine comprises a static outer jacket provided with conventional elements for coupling to a loading inlet of the grinding machine. Annular recesses are formed in the internal thickness of the jacket, have preset volumes and are mutually separated. A food pusher and cutter element is mounted inside the jacket so that it rotates coaxially, and a screening element with differentiated passage regions is interposed between the pusher and the jacket. Each region can be crossed at the annular recesses.

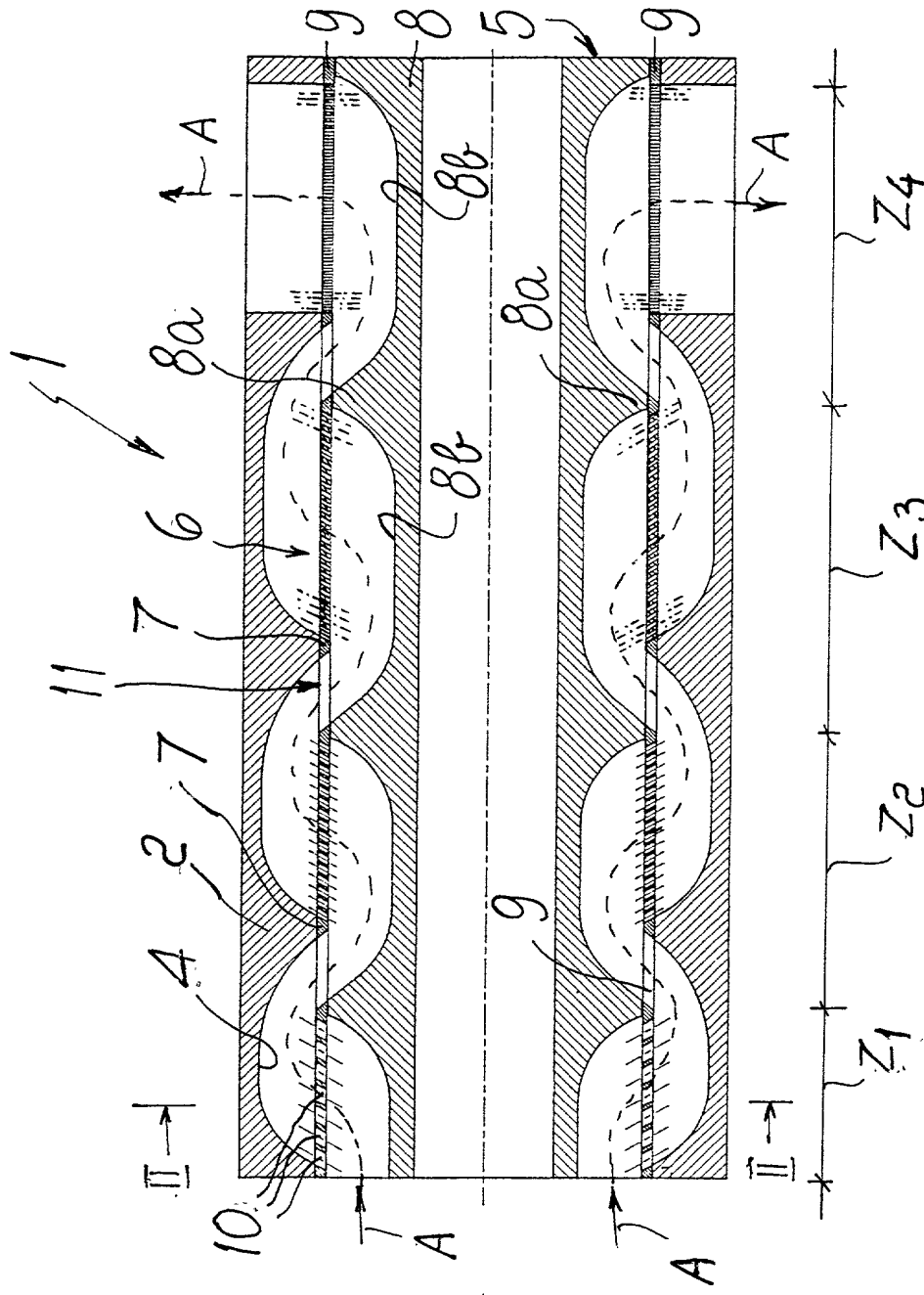


Fig. 1

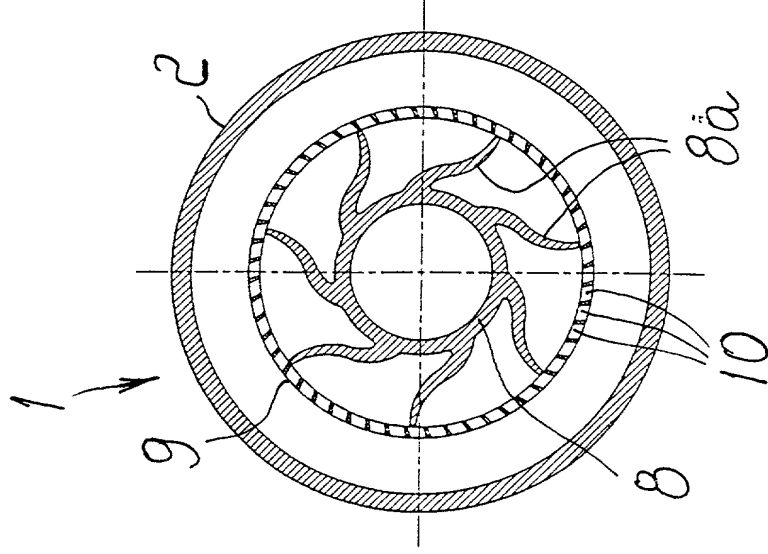


Fig. 2

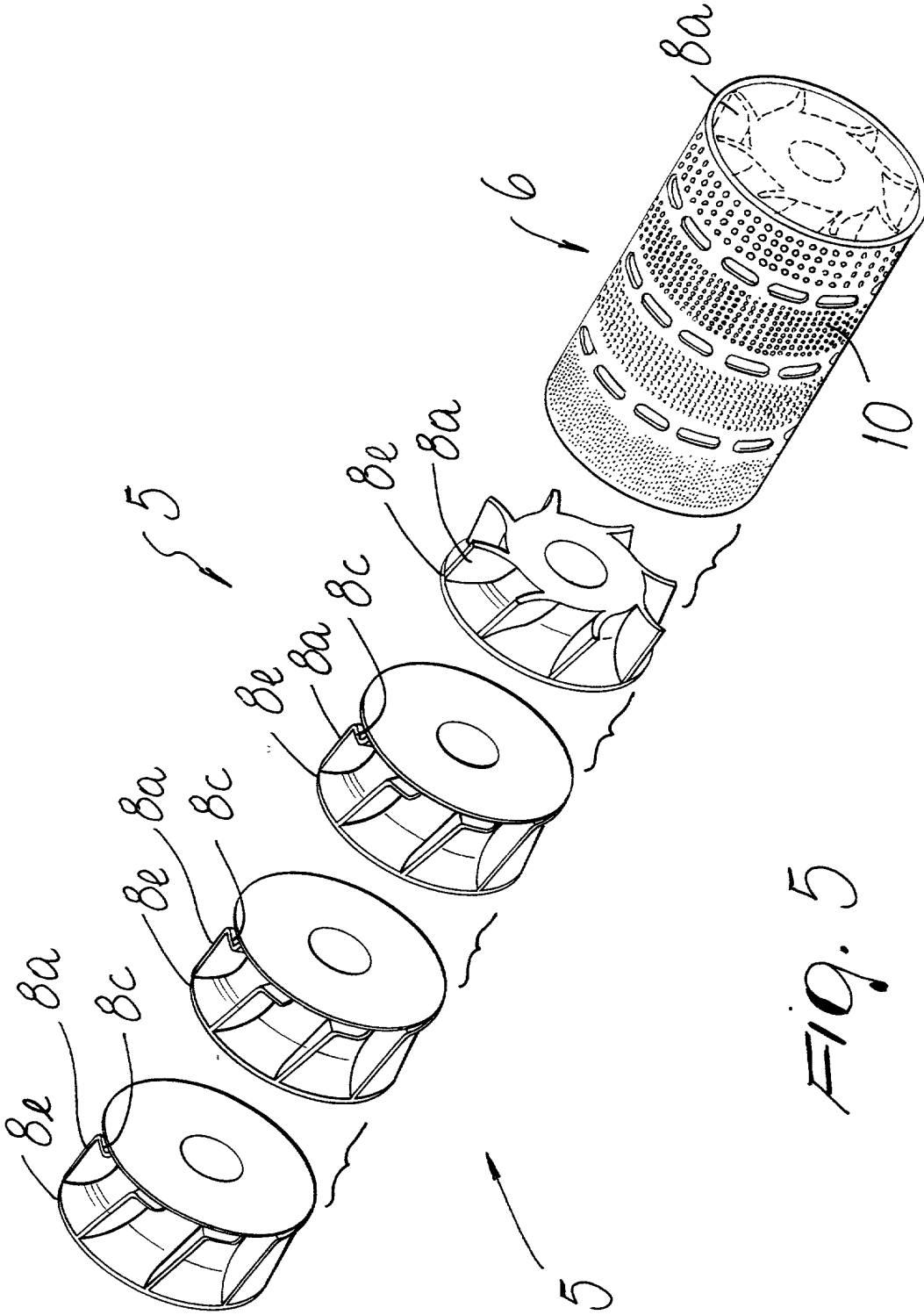
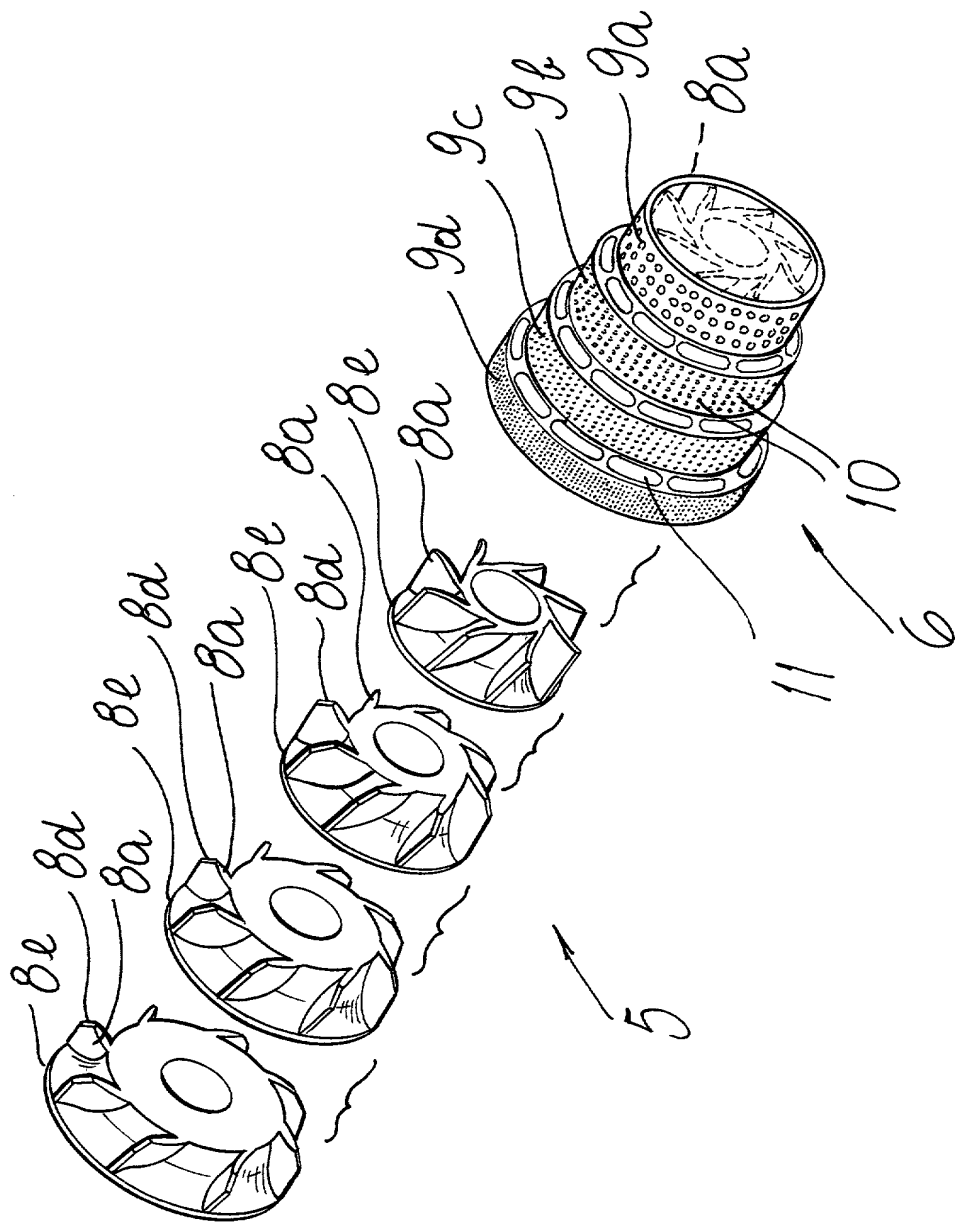


FIG. 5



6014

0010/PTO Rev. 6/95 U.S. Department of Commerce Patent and Trademark Office DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION	Attorney Docket Number	3962
	First Named Inventor	Marcello Quadrana
	<i>COMPLETE IF KNOWN</i>	
	Application Number	
	Filing Date	
	Group Art Unit	
	Examiner Name	
<input checked="" type="checkbox"/> Declaration Submitted with Initial Filing OR <input type="checkbox"/> Declaration Submitted after Initial Filing		

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

FOOD GRINDER

the specification of which

☒ is attached hereto
OR

☐ was filed on (MM/DD/YYYY) [] as United States Application Number or PCT International Application Number [] and was amended on (MM/DD/YYYY) [] (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.


I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations. § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code § 119 (a)-(d) or § 385(b) of any foreign application(s) for patent or inventor's certificate, or § 365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
M096A000057	ITALY	05/10/1996	X	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto:

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.		
Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental sheet attached hereto.

DECLARATION				Page 2	
<p>I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.</p>					
U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)		
08/962,824		11/03/1997			
<input type="checkbox"/> Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto.					
<p>As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:</p>					
Name	Registration Number	Name	Registration Number		
Albert C. Smith	20,355	Rajiv P. Patel	39,327		
<input type="checkbox"/> Additional attorney(s) and/or agent(s) named on a supplemental sheet attached hereto.					
<p>Please direct all correspondence to:</p> <p style="text-align: center;"> Albert C. Smith Fenwick & West LLP Two Palo Alto Square Palo Alto, CA 94306 U.S.A. </p>					
Telephone	(650) 858-7296		Fax	(650) 494-1417	
<p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.</p>					
Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name	Marcello	Middle Initial		Family Name	QUADRANA
				Suffix e.g. Jr.	
Inventor's Signature				Date	May 21, 1999
Residence: City	Bologna	State		Country	ITALY
				Citizenship	Italian
Mailing Address	Via Weber, 4				
Mailing Address					
City	Bologna	State		Zip	40138
				Country	ITALY
<input type="checkbox"/> Additional inventors are being named on supplemental sheet(s) attached hereto					